

Serial No. 10/614,055

Attorney Docket No. 01T-032

**LISTING OF CLAIMS:**

Claims 1 – 10 (Canceled).

11. (Currently Amended) An optical switching subsystem comprising:

a plurality of input optical ports for inputting an optical signal;

a plurality of output optical ports for outputting the optical signal;

an optical switch formed by a micro electromechanical system (MEMS) for switching an optical path among said input optical ports and said output optical ports;

a controller for instructing said optical switch to execute switching operation;

self-diagnosis means for measuring performance characteristics of said optical switching subsystem and diagnosing said optical switching subsystem based upon said performance characteristics; and

calibration means for calibrating control over the operation of said optical switch,  
wherein said calibration means comprises gain compensating means for compensating  
converting correction gain between control input and control output of the optical switch and  
said self-diagnosis means operates based upon said converting correction gain.

12. (Original) The optical switching subsystem according to claim 11, wherein said calibration means comprises compensating means for calculating a controller output correction value and said self-diagnosis means operates based upon said controller output correction value.

Claim 13 (Canceled).

Serial No. 10/614,055

Attorney Docket No. 01T-032

14. (Original) The optical switching subsystem according to claim 11, wherein the calibration means operates when the self-diagnosis means determines that a corresponding reflecting mirror of the optical switch fails based on measured performed characteristics.

15. (Original) The optical switching subsystem according to claim 14, wherein the self-diagnosis means operates again after the calibration is executed by the calibration means, and the self diagnosis means notifies a host system when it is diagnosed at that time that the corresponding reflecting mirror fails.

16. (Currently Amended) An optical switching subsystem comprising:

- a plurality of input optical ports for inputting an optical signal;
- a plurality of output optical ports for outputting the optical signal;
- an optical switch formed by a micro electromechanical system (MEMS) for switching an optical path among said input optical ports and said output optical ports;
- a subsystem controller circuit for controlling said optical switching subsystem;
- a switching module controller circuit for controlling said optical switch;
- a memory connected to said subsystem controller and said switching module controller, for storing control parameters related to said optical switch;
- a monitor for outputting a signal to the subsystem controller according to said output signal[[]];

Serial No. 10/614,055

Attorney Docket No. 01T-032

a feedback control circuit for feedback controlling, wherein said feedback control circuit includes:

said memory;

a controlled object for outputting control output;

a controller for outputting output of controller to said controlled object;

a comparator for comparing said control output with reference value from said memory;

a controller output compensator for outputting controller output correction value;

a signal adder for adding the output of controller and the controller output correction value; and

a gain compensator for outputting control input to said controlled object.

17. (Currently Amended) An optical communication system comprising:

said optical switching subsystem according to claim 16, a host system said host system ~~recurring~~ receiving information related said optical switch from said optical switching subsystem.

18. (Original) The optical switching subsystem according to claim 16, comprising a ranking circuit for determining ranks of operation of switching elements.

Claims 19 ~ 25 (Canceled).